

UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION

PATENT NO. : 6,892,762 B2

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APPLICATION NO. : 10/087709

DATED : May 17, 2005

INVENTOR(S) : George K. Porter, Seth B. Wolf and Charles W. Albrecht

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

The Title page showing the illustrative figure should be deleted and substituted with the attached title page.

Drawing Sheets 1 through 14 should be replaced with drawings Sheets 1 through 14 that are attached.

On the Title page, Item (56) under References Cited, the date "2/1955" for U.S. Patent No. 2,871,887 should read --4/1955--.

At column 11, line 56, "mare" should read --more--.

At column 12, line 37, delete "(iii)".

At column 12, line 50, delete "(iii)".

At column 13, line 52, "seated" should read --sealed--.

At column 15, line 6, "deliver" should read --delivery--.

At column 15, line 7, "fluid" should read --fluidic--.

At column 15, line 9, "deliver" should read --delivery--.

At column 15, line 10, "fluid" should read --fluidic--.

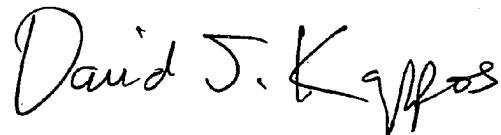
At column 16, line 1, "deliver" should read --delivery--.

At column 16, line 2, "fluid" should read --fluidic--.

At column 16, line 4, "deliver" should read --delivery--.

Signed and Sealed this

Thirtieth Day of November, 2010



David J. Kappos  
Director of the United States Patent and Trademark Office

**CERTIFICATE OF CORRECTION (continued)**  
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At column 16, line 5, "fluid" should read --fluidic--.

At column 16, line 7, "deliver" should read --delivery--.

At column 16, line 8, "fluid" should read --fluidic--.

(12) United States Patent  
Porter et al.(10) Patent No.: US 6,892,762 B2  
(45) Date of Patent: May 17, 2005

(54) MANIFOLDED FLUID DELIVERY SYSTEM

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 5,692,558 A 12/1997 Hamilton et al.  
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 6,058,012 A 5/2000 Cooper et al.  
 6,076,556 A 6/2000 Puchs et al.  
 6,244,575 B1 \* 6/2001 Vaarst et al. ..... 261/141

(21) Appl. No.: 10/087,709

## OTHER PUBLICATIONS

(22) Filed: Feb. 28, 2002

"What you can get in manifolds", Hydraulics and Pneumatics, vol. 16, No. 11 (Nov., 1963), pp. 88-89.\*

(65) Prior Publication Data

\* cited by examiner

US 2002/0124961 A1 Sep. 12, 2002

Primary Examiner—John Fox

(60) Provisional application No. 60/271,947, filed on Feb. 28, 2001.

(74) Attorney, Agent, or Firm—RatnerPrestia

(51) Int. Cl. 7 ..... F16K 11/10  
 (52) U.S. Cl. ..... 137/884  
 (58) Field of Search ..... 137/884, 261/78.2

## ABSTRACT

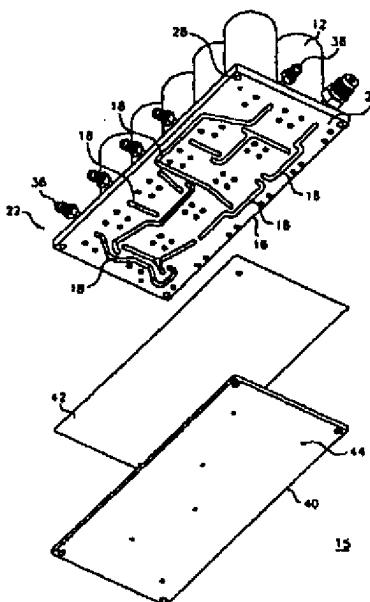
(56) References Cited

An integrated fluid delivery system (IFDS) is provided for delivering fluid streams such as high purity fluid streams to a processing destination, such as a wafer processing chamber. The delivery system includes a first modular manifold for internally channeling the high purity fluid streams along seamless slots. The first modular manifold receives each of the high purity fluid streams at a corresponding porting aperture. At least one fluid device from a group consisting of a flow controller, a valve, a filter and a pressure transducer is provided. The at least one fluid device is in fluidic communication with a corresponding one of the high purity liquid streams of the first modular manifold to dispense the high purity fluid streams from the integrated liquid delivery system to the wafer processing chamber.

## U.S. PATENT DOCUMENTS

35 Claims, 14 Drawing Sheets

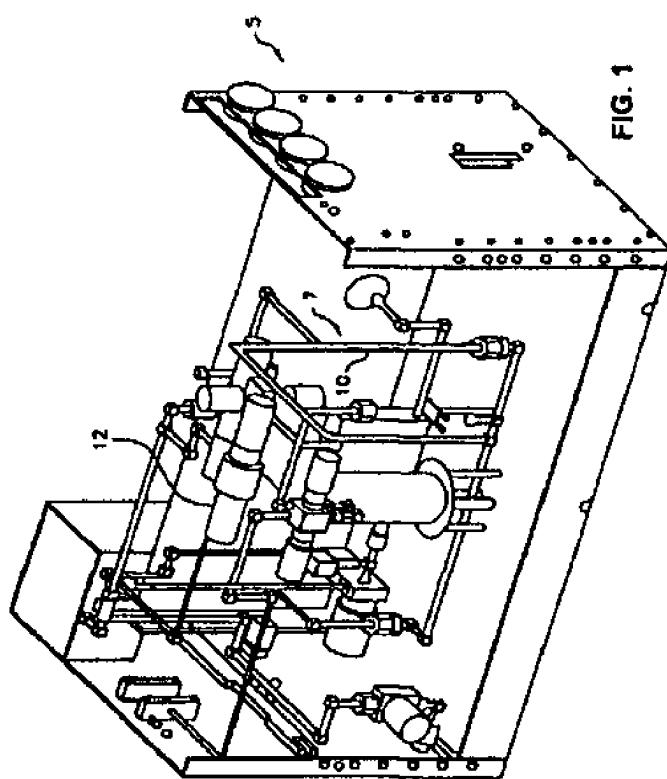
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**CERTIFICATE OF CORRECTION (continued)**

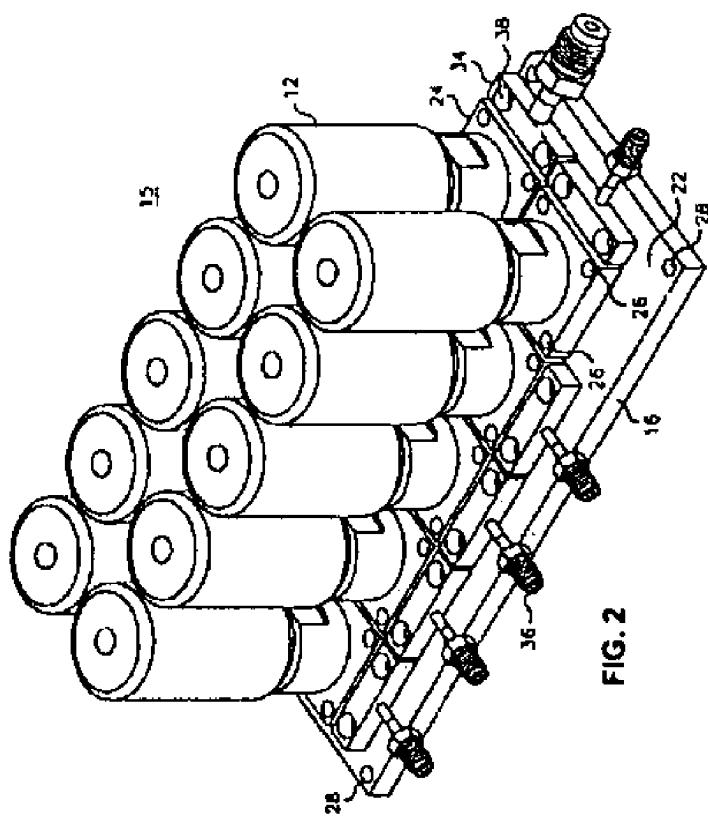
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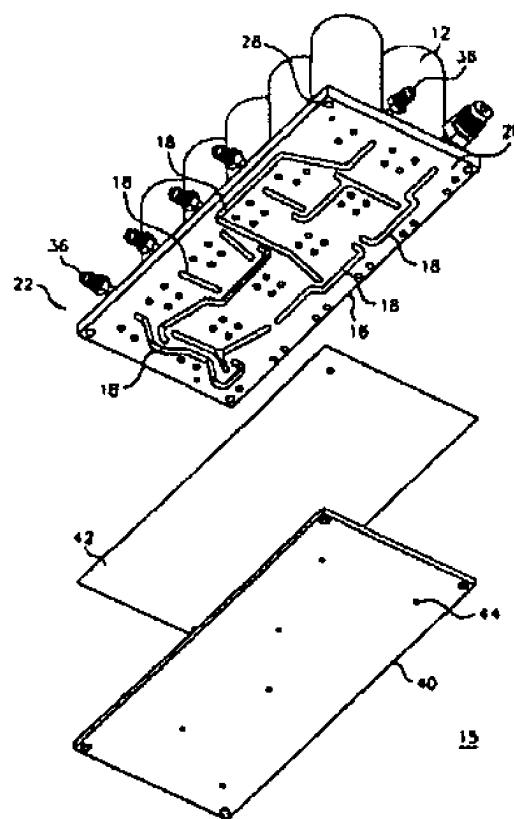
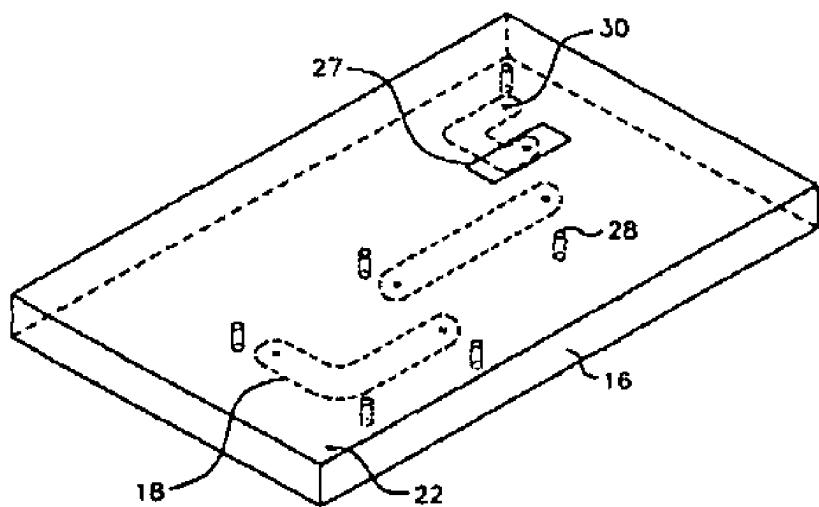


FIG. 3

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**6,892,762 B2****FIG. 4**

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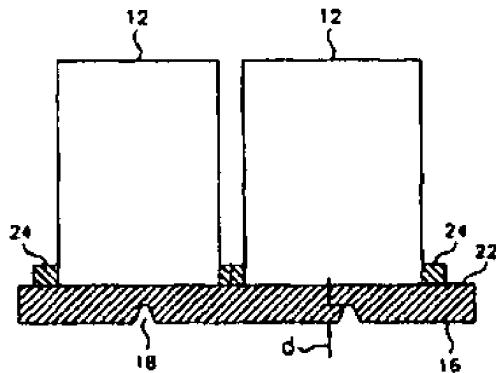


FIG. 5

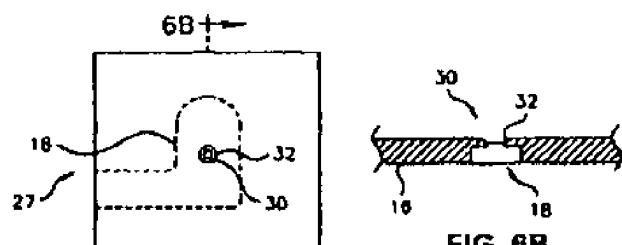


FIG. 6A

FIG. 6B

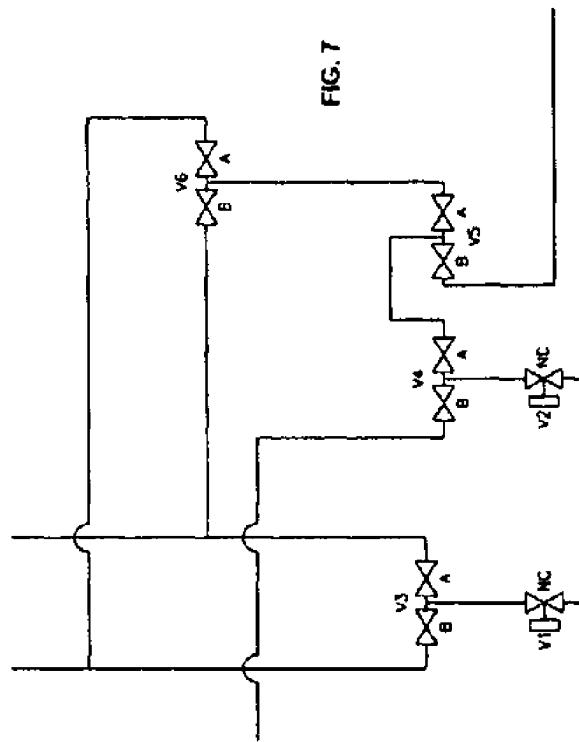
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FIG. 7



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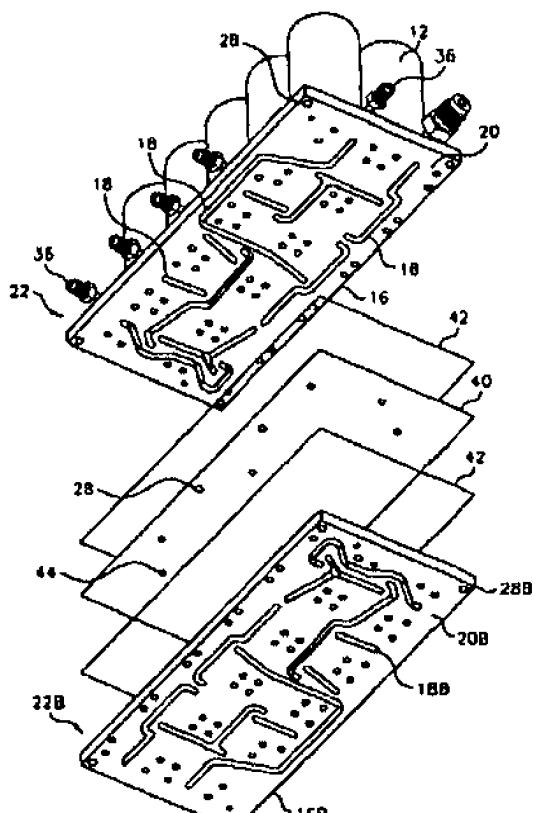


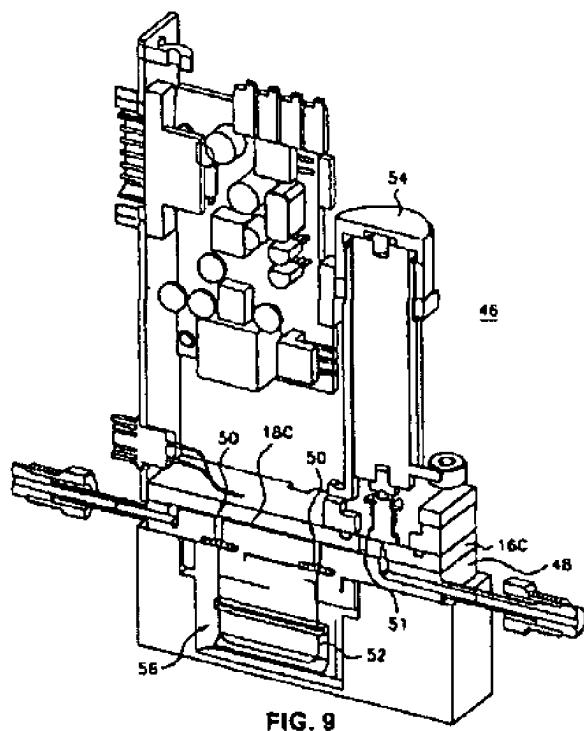
FIG. 8

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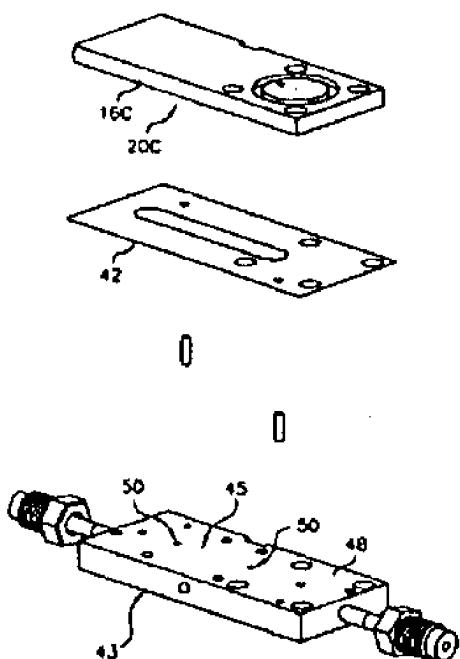


FIG. 10A

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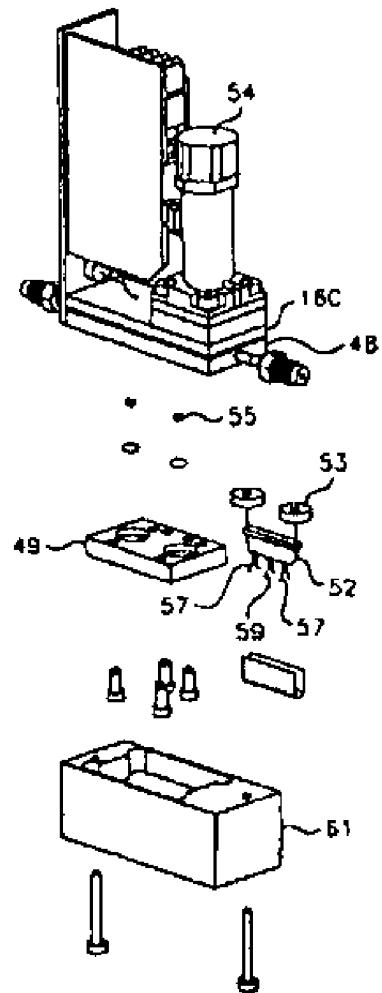


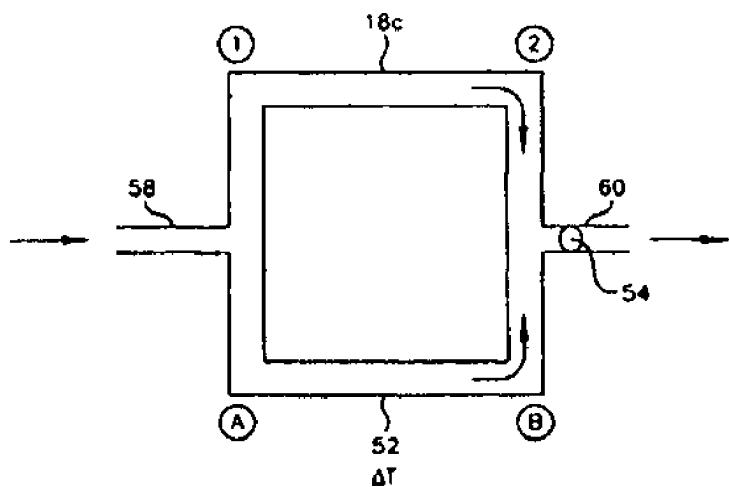
FIG. 10B

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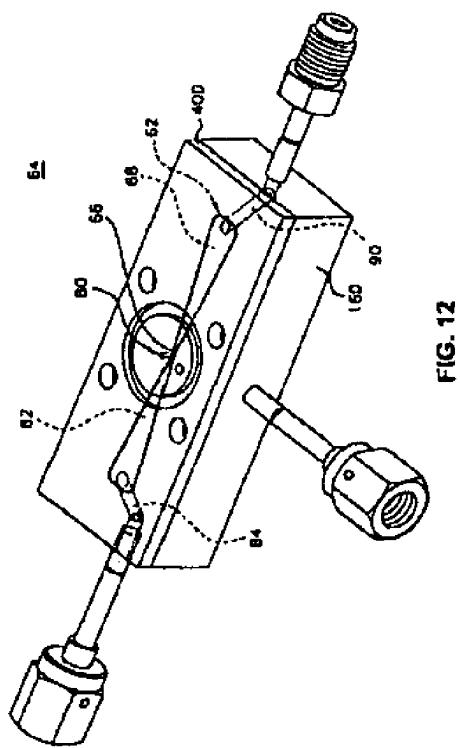
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**FIG. 11**

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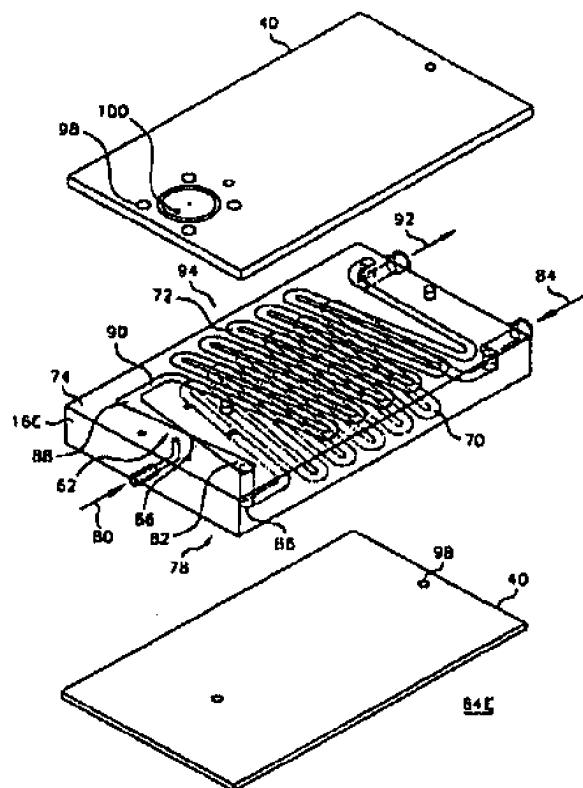


FIG. 13

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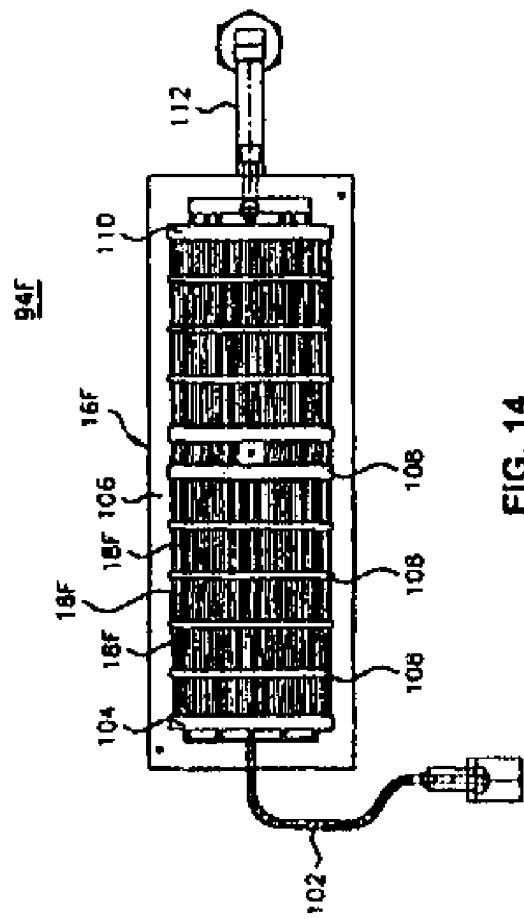


FIG. 14